

***What Is Claimed Is:***

1 ~~1. A system for allowing a user to perform remote vehicle diagnostics,~~  
2 ~~vehicle monitoring, vehicle configuration and vehicle reprogramming for one or~~  
3 ~~more vehicles, comprising:~~

4 ~~(A) an onboard unit coupled to the data bus of the one or more~~  
5 ~~vehicles;~~

6 ~~(B) an application server which provides the user with a graphical user~~  
7 ~~interface (GUI) in order to send and receive data from each of the one or more~~  
8 ~~vehicles;~~

9 ~~(C) a repository database, accessible via said application server, which~~  
10 ~~stores information related to the one or more vehicles;~~

11 ~~(D) an onboard unit server, coupled to said application server, which~~  
12 ~~contains means to convert data between a format understandable by the user using~~  
13 ~~said GUI, and a format understandable by said onboard unit coupled to the data~~  
14 ~~bus of the one or more vehicles; and~~

15 ~~(E) a communications means, coupled to said onboard unit server, for~~  
16 ~~handling communications between said onboard unit server and said onboard~~  
17 ~~units located on the one or more vehicles;~~

18 ~~whereby said system allows the user to perform total fleet logistics by~~  
19 ~~facilitating vehicle parameter changes, vehicle health tracking, and receipt of~~  
20 ~~vehicle maintenance need indications, thus eliminating the need to physically~~  
21 ~~bring the one or more vehicles to a repair, maintenance, or configuration facility.~~

1 2. The system of claim 1, wherein the one or more vehicles includes a  
2 combination of any of the following:

3 (i) passenger cars;

4 (ii) light trucks;

5 (iii) vans; and

6 (iv) heavy trucks.

1 3. The system of claim 1, wherein said format understandable by said  
2 onboard coupled to the data bus of the one or more vehicles is binary.

1 4. The system of claim 1, wherein at least a first portion of said  
2 communications means includes the global Internet.

1 5. The system of claim 2, wherein at least a second portion of said  
2 communications means includes at least one of the following:

- 3 (i) satellite communications; **A**  
4 (ii) code division multiple access (CDMA) communications;  
5 (iii) time division multiple access (TDMA) communications; and  
6 (iv) the Bluetooth® wireless communications.

1 **303**  
2 **A4** **>** ~~6. A system for a vehicle onboard unit that allows a user to perform remote  
3 vehicle diagnostics, vehicle monitoring, vehicle configuration and vehicle  
4 reprogramming, comprising:~~

- 4 (A) a central processing unit (CPU);  
5 (B) user input/output (I/O) channel ports for receiving  
6 communications from the user;  
7 (C) a first application program interface means, executing on said  
8 CPU, for extracting a command from said communications received by said user  
9 I/O channel ports, wherein said command includes information specifying a  
10 vehicle and at least one vehicle parameter;  
11 (D) vehicle input/output (I/O) channel ports for receiving and sending  
12 communications to a vehicle data bus located on said vehicle;  
13 (E) a second application program interface means, executing on said  
14 CPU, for communicating said command, via said vehicle I/O channel ports, to  
15 said vehicle data bus thereby causing said at least one vehicle parameter to be  
16 read or changed;

17 whereby said system allows the user to perform total fleet logistics by  
18 facilitating vehicle parameter changes, vehicle health tracking, and receipt of

19 ~~Vehicle maintenance need indications, thus eliminating the need to physically~~  
20 ~~bring said vehicle to a repair, maintenance or configuration facility.~~

1 7. The system of claim 6, wherein said first application program interface  
2 means includes means for extracting said command from one of the following  
3 types of communications received on said user I/O channel ports:

- 4 (i) satellite communications;  
5 (ii) code division multiple access (CDMA) communications;  
6 (iii) time division multiple access (TDMA) communications;  
7 (iv) the Bluetooth® wireless communications;  
8 (v) USB; and  
9 (vi) IDB.

1 8. The system of claim 6 wherein said second application program interface  
2 means includes one of the following application program interfaces:

- 3 (i) SAE J1708;  
4 (i) SAE J1587;  
5 (iii) SAE J1939;  
6 (iv) SAE OBD II; and  
7 (v) manufacturer proprietary interfaces.

Sub A5  
2 9. A method for allowing a user to perform remote diagnostics, monitoring  
configuring, and reprogramming for a fleet of vehicles, comprising the steps of:

- 3 (1) accessing a repository database in order to provide the user with  
4 a list of specific vehicles within the fleet of vehicles and a list of associated  
5 vehicle parameters;  
6 (2) receiving, via a graphical user interface (GUI), a command from  
7 the user, wherein said command includes information specifying at least one  
8 vehicle from said list of vehicles and one vehicle parameter from said list of  
9 associated vehicle parameters;

(3) storing said command in said repository database along with the time and date that said command was received from the user;

(4) converting said command from a format understandable by the user using said GUI to a format understandable by an onboard unit located on said at least one vehicle;

(5) sending said command, via a wireless mobile communications system, in said format understandable by said onboard unit located on said at least one vehicle, thereby causing said at least one vehicle parameter to be read or changed;

(6) receiving an acknowledgment of said command from said onboard unit, via said wireless mobile communications system; and

(7) storing said acknowledgment in said repository database so that the user may later retrieve said acknowledgment using said GUI;

whereby said method allows the user to perform total fleet logistics by facilitating vehicle parameter changes, vehicle health tracking, and receipt of vehicle maintenance need indications, thus eliminating the need to physically bring vehicles within the fleet to a repair, maintenance, or configuration facility.

10. The method of claim 9, wherein at least a portion of said GUI is provided to the user via the global Internet.

11. The method of claim 9, wherein at least a portion of said wireless mobile communications system includes at least one of the following:

- (i) satellite communications;
- (ii) code division multiple access (CDMA) communications;
- (iii) time division multiple access (TDMA) communications; and
- (iv) the Bluetooth® wireless communications.

12. A computer program product comprising a computer usable medium having control logic stored therein for causing a computer to provide remote

3 diagnostics, monitoring, configuring and reprogramming for a fleet of vehicles,  
4 said control logic comprising:

5 first computer readable program code means for causing the computer to  
6 access a repository database in order to provide the user with a list of specific  
7 vehicles within the fleet of vehicles and a list of associated vehicle parameters;

8 second computer readable program code means for causing the computer  
9 to receive, via a graphical user interface (GUI), a command from the user,  
10 wherein said command includes information specifying at least one vehicle from  
11 said list of vehicles and one vehicle parameter from said list of associated vehicle  
12 parameters;

13 third computer readable program code means for causing the computer to  
14 store said command in said repository database along with the time and date that  
15 said command was received from the user;

16 fourth computer readable program code means for causing the computer  
17 to convert said command from a format understandable by the user using said  
18 GUI to a format understandable by an onboard unit located on said at least one  
19 vehicle;

20 fifth computer readable program code means for causing the computer to  
21 send said command, via a wireless mobile communications system, in said format  
22 understandable by said onboard unit located on said at least one vehicle, thereby  
23 causing said at least one vehicle parameter to be read or changed;

24 sixth computer readable program code means for causing the computer to  
25 receive an acknowledgment of said command from said onboard unit, via said  
26 wireless mobile communications system; and

27 seventh computer readable program code means for causing the computer  
28 to store said acknowledgment in said repository database so that the user may  
29 later retrieve said acknowledgment using said GUI;

30 whereby said computer program product allows the user to perform total  
31 fleet logistics by facilitating vehicle parameter changes, vehicle health tracking,  
32 and receipt of vehicle maintenance need indications, thus eliminating the need to

33 physically bring vehicles within the fleet to a repair, maintenance or configuration  
34 facility.

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